Ουρανοδεῖξις.

Cœlorum declaratio.

AN Ephemeris

For the yeer of Christ, 1652.

Being Bissextile or Leap-yeer: and from the Creation according to KEPLER. 5645.

Containing

A description of the four quarters of the yeer, of the Ecclipses, and especially of the great and fearful Ecclipse of the Sunne.

How exactly to erect a Scheme of the heavens with dexterity and facility by Trigonometrical Logarithmetick without the Tables of Oblique Ascensions. How according to the true rules of Geometry with speed and ease to measure round Tapering timber, and other things never heretofore printed or published by any man.

Calculated for the Meridians of the two ancient Port Towns of *Sandwich* and *Dover*, but the calculation of the Suns Ecclipse properly referred to the Meridian of *Sandwich* where the Pole Artick is elevated above the Horizon 51 degr 18 min.

Authore HENRICO HARFLETO Gent. tàm Astronomicæ quàm Geometricæ, ac reliquarum partium Mathematicarum scrutatore.

Ἡ ἀλήθεια τὰς γωνίας ου ζητεῖ.

LONDON, Printed by T. R. & E. M. for the Company of STATIONERS, 1652.

The common Notes and movable Feasts according to the account in *England*.

English accoũt 1652.		Roma accoũt 1652.
19	The Golden number.	19
9	The circle of the Sun.	9
29	The Epact.	19
D.C	The Dominical Letter.	G.F
February 29	Shrove Sunday	11 February.
April 18	Easter day	31 March
May 23	Rogation Sunday	5 May.
May 27	Ascention day	9 May.
June 6	Whitsunday	19 May.
November 28	Advent-Sunday	1 December.

The Anatomy of mans body, as the parts thereof are by Astrologers attributed unto the 12 signes of the Zodiack.

♈ Head and face.

♉ Neck and throat.

♋ Breast, stomach & ribs

♍ Bowels and belly.

♏ Secret members.

♑ Knees.

♊ Armes and shoulders

♌ Heart and back.

♎ Reins and joynes.

♐ Thighes

♒ Legges.

♓ The Feet.

BIBLIOTHECA BODLEIANA

Duke *William* conquered *England*	586
The invention of Guns	274
The invention of Printing	212
The infectious ſweating ſickneſs	95
The Great Maſſacre in *France*	91
Pauls ſteeple was ſet on fire	91
The fiery Apparition in the heavens	78
The generall Earthquake in *England*	72
The great Snow	72
The Spaniſh fleet, 1588	64
The Camp at *Tilbury* in *Eſſex*	63
The Gunpowder Treaſon, *November* 5.	47
The Comet or blazing ſtar, from *November* 18. to *December* 16. 1618.	34
The great Plague in *London*. 1625	29
The laſt great Earthquake in *England*	26
The Duke of *Buckingham* murthered	24
The third part of *London* Bridge burnt	20
This preſent Parliament began *Novemb.* 3. 1640.	12
The Earl of *Strafford* beheaded on Tower hill *May* 12. 1641.	11
The Iriſh Rebellion began *October* 23. 1641.	11
King *Charles* went from his Parliament, *Janu* 10.	11
King *Charles* ſet up his Standard at *Nottingham*	11
The fight at *Kenton*, *October* 23. 1642.	10
The fight at *Brainford*, *Novemb.* 12. 1642.	10
Cheapſide Croſſe demoliſhed, *May* 2. 1643.	9
The taking of the Scots Covenant in *England*	9
The fight at *Newbury*	8
The great fight at *York*	8
The Biſhop of *Canterbury* was beheaded *Janu.* 10. 1644.	8
The fight at *Nazby*, *June* 4. 1645.	7
King *Charles* was beheaded, *January* 30.	3
Duke *Hambleton*, Earle of *Holland* and Lord *Capel* was beheaded, *March* 9. 1649.	3

Since

The Tide Table.

Names of the Havens.	H.	M.	Points of the compas
Quinbrough, Southampton, Portsmouth, Ile of Wight, Dunkerk half tide.	0	0	S and N
Rochester, Aberden, Redban.	0	45	S by E
Gravesend, Downes, Rumney, Tenet.	1	30	S S W
Dundee, St. Andrews, Lisborn,	2	15	S W by S
London, Tinmouth, Amsterdam, Hartlep.	3	0	S W
Barwick, Ostend, Flushing, Burdeaux.	3	45	S W by W
Scarborough qu. tide, Cork Calice creek.	4	30	W S W
Falmouth, Dartmouth, Newcastle, Lizard.	5	15	W by S
Plimouth, Weymouth, Hull, Lin, Antwerp	6	0	E and W

To these adde the time of the Moons southing, but for these following, subtract from the time of the Moons southing.

	H.	M.	Points of compasse
Bristol, at the Start, Foulnesse.	5	15	E by S
Milford, Bridgwater, Landsend, Waterford	4	30	E S E
Portland, Harflew, Hague, Dublin.	3	45	S E by E
Poole, Man Ile St. Hellens, Dunbar.	3	0	S E
Needles, Oxford, Sou. and Norforeland.	2	15	S E by S
Sandwich, Dover, Yarmouth, Harwich. Calice roade.	1	30	S S E
Ry, Winchelsey. Gorend.	0	45	S by E

Use by Example.

January 1. When high water at *London*. In the blank page of the *Ephemeris*, I finde the Moon South at 18 min. past 12 at noon, to which I adde 3 hours that is against *London*, and it makes 18 min. past 3 afternoon. When that day at *Sandwich* I substract 1 hour 30 min. from 12 hours and there is left 48 min. past 10 of the clock in the forenoon, the time of high water at *Sandwich*; *Et sic de aliis.*

How to correct the place of the Moone in the *Ephemeris*.

IF the Moon comes to the South in the afternoon, multiply the hours of her southing by 2 minutes, the product substract from the time of her southing, the remainder adde to Sunnes right Ascension at noon, and the total is the right Ascension of the Moon that day at noon.

But if the Moon comes to the South in the morning, then substract the time of her southing from 12 houres, then work as before, only substract the remainder out of the Suns right Ascension.

Example.

March 1. The Moon South at 18 minutes past 1 after noon, which multiplied by 2 min. the product is 2 min. 36 seconds substracted from 1 h. 18 min. remains 1 h. 15 min. 24 seconds, this added to the Sunnes Right Ascension at noon which is 23 h. 29. min. 34 seconds, the right Ascension of ♓ 21 degrees, 42 min. the Suns place at noon, the totall is 0 ho 44. min. 58 seconds, to which in the Table of Right Ascensions answers ♈ 12 deg. 15 min. the true place of the moon in her orbite that day at noon.

Another Example.

March 28. The Moon South at 12 min. past 11 before noon, substracted from 12 houres, remains 0 ho. 48. min. multiplyed by 2 min. product 1 min. 36 seconds substract, remains 0 ho. 46 min. 24 sec. substracted from the Sunes right Ascension 1 ho. 7 min. 41 sec. remains 0 ho. 21 min. 17 sec. to which answers ♈ 5 degr. 43 min. the place of the Moon at noon in her orbite.

To the READER.

SOme say, these Times are difficult to please, but I say, Men to be pleased in these Times; It is impossible for all that write in this nature, to humour the nature of all. Some in these Weather-change times, look after the change of the weather, as though man could be punctual in a Contingency. *Stellæ inclinant, non necessitant*; There is in the Stars a probability of a natural inclination, no necessity of a punctual operation; That they incline, tis to them naturall: that they operate, tis in GOD punctual: *Astronomy* and *Astrology* are of neere alliance, as the cause and the effect; I hope no man will be so foolish as to force an absolute separation. *Logick* saith, *Sublatâ causâ tollitur effectus*. Take away the cause and the effect ceaseth, but yet *positâ causâ non necessariò ponitur effectus*; The cause may be transparent, yet the effect may seem to be clouded. The former hath been my many-yeeres-study, and when I was somwhat versed in that, I fell upon the latter, when I understood the cause, I desired to be acquainted with the effect; *Judgement* and *Demonstration* prove the one, the learned and judicious confesse it. Sence and feeling may in time manifest the other; the ignorant and unlearned may acknowlede it. As the last yeere, so this I have written somewhat of both. The one is grounded upon a more certainty; the other (some say) upon a meere contingencie, well, grant it. The last yeere in *March* and *April* I writ of dry Weather.

And

And in the observations for *May*, of Wormes and Caterpillars which might destroy the fruit of the earth; I am sure to the writing hereof we have seen it with our own eyes to our own sorrows, God avert his judgements. I would fain be πᾶς μάων, but that cannot be. I cannot please all, if some, I am somewhat pleased; My judgement is not infallible, how can my writings be so, then

Reader, the faults or mend, or passe them by,
The Printer may mistake, and so may I.

HENRY HARFLETE

WHosoever shall have occasion to use any Instruments either for the Surveying of Lands, or Navigation, Fortification, or the Projection of the Sphere in any kinde. Or Sun-dialls of all sorts, either fixed or movable, they may be furnished in the great *Minories* without *Algate* at the signe of the *Globe*, by *Thomas Browne.*

The beginning and ending of every Terme, with their returns, are set down in their places in the following *Ephemeris.*

January hath xxxi. dayes.

New Moon, 1 day, 3 quarters past 4 in the morning.
First quarter, 7 day, 50 min. past 7 at night.
Full Moon, 15 day, 38 min. past 3 afternoon.
Last quarter, 23 day, 42 min. past 6 at night.
New Moon, 30 day, 14 min. past 3 afternoon.

1	g	Moon perc	21	♑ 6	capi	11	c	Cold frosty weather begins this month, & so continue for the most part til the 11 day yet like to snow about the 4 or 5.
2	a		22	8	aqu.	12	d	
3	b		23	9	aqu.	13	e	
4	c		24	10	pſc.	14	f	
5	d		25	11	piſc.	15	g	
6	e	Epiphany	26	12	ari.	16	a	
7	f		27	14	ari.	17	b	
8	g		28	15	taur.	18	c	
9	a		29	16	taur.	19	d	
10	b		♌ 0	17	gem	20	e	
11	c	1 after Epiph.	1	18	gem	21	f	From 11 till 16 much wet weather or snow, after that more temperate til about 22 day, from thence until the months end, for the most part we may expect much rain or snow with high winds, onely the 26 or 27 more temperate.
12	d		2	19	gem	22	g	
13	e	Hillary	3	20	canc	23	a	
14	f		4	21	canc	24	b	
15	g		5	22	leo	25	c	
16	a		6	23	leo	26	d	
17	b		7	24	leo	27	e	
18	c	2 after Epiph.	8	25	virg	28	f	
19	d		9	26	virg	29	g	
20	e	Octab. Hillar.	10	27	libr.	30	a	
21	f		11	28	libr.	31	b	
22	g		12	29	libr.	Febr.	c	
23	a	Terme begins	13	30	ſcor.	2	d	
24	b		14	31	ſcor.	3	e	
25	c	Conver. Paul	15	31	ſag.	4	f	
26	d		16	32	ſag.	5	g	
27	e	Quind. Hillar.	17	33	cap.	6	a	
28	f		18	34	cap.	7	b	
29	g		19	35	aqu.	8	c	
30	a		20	35	aqu.	9	d	
31	b		21	36	piſc.	10	e	

Is *Venus* in Parley with *Mercury*? and doth *Jupiter* ſalute her with a friendly ſextile. I pray God the State-cheating Mercurialiſts may be brought to juſtice.

Sunne rising at *Sandwich*		Sunne set.	
Day	hour. min. sec.	Day	hour. min. sec.
1	8 0 21	1	3 59 57
11	7 48 0	11	4 11 32
21	7 32 28	21	4 28 12

1	0	A	18
2	1		15
3	2		12
4	3		7
5	4		0
6	4		50
7	5		40
8	6		29
9	7		20
10	8		10
11	9		1
12	9		52
13	10		44
14	11		31
15	12		15
16	0	M	15
17	0		58
18	1		38
19	2		19
20	3		0
21	3		42
22	4		27
23	5		14
24	6		3
25	6		56
26	7		53
27	8		50
28	9		50
29	10		50
30	11	A	51
31	0		41

Moon South. Note A. stands for afternoone, and *M.* for morning or before noone.

In the top of this page throughout the book is set down the true time of Sun-rising and setting, calculated by me for the Latitude of 51 degrees and 18 min. If you would know the length of the day, substract the time of Sun-rising from 12 hours, the remainder adde to the time of Sun-setting, and you have the true length of the day. This needs no example: The reason why I have not gone the ordinary way, you may read in my *Ephemeris* for last yeere 1651. in the Astronomical propositions; which serve not for a yeere onely, but for ever, and are good and profitable for all those that desire to be studious herein.

February hath xxix. dayes.

First quarter, 6 day, 50 min. past 8 in the morning.
Full Moon, 14 day, 17 min. past 10 in the morning.
Last quarter, 22 day, 49 min. past 8 in the morning.
New Moon, 29 day, 9 min. before 1 in the morning.

1	C	4 after Epiph.	22	♒ 37	pisc.	11	g	As the moneth
2	d	Purif. Mary	23	37	ari.	12	g	ends, so this be-
3	e	Craft. Purif.	24	38	ari.	13	a	gins with snow or
4	f		25	38	taur.	14	b	rain and winds
5	g		26	39	taur	15	c	till about the 7
6	a		27	39	tau.	16	d	or 8 day, from
7	b		28	40	gem	17	e	thence to the 26
8	C	5 after Epiph.	29	40	gem	18	f	day more tempe-
9	d		0	♓ 41	can.	19	g	rate, yet frosty
10	e	Octabis Purif.	1	41	an.	20	a	from thence to
11	f		2	42	l. o	21	b	the moneths end
12	g	Terme ends	3	42	eo	22	c	winds and rain
13	a		4	42	leo	23	d	with tempestuous
14	b	Valentine	5	42	virg.	24	e	troubled aire.
15	C	Septuages.	6	42	virg.	25	f	
16	d		7	43	libr.	26	g	*Italy* be cautious,
17	e		8	43	libr.	27	a	*Rome* look about
18	f		9	43	libr.	28	b	you, have at your
19	g		10	43	scor.	29	c	Triple Crowne
10	a		11	43	cor.		d	ere long. The
21	b	C Diacenter.	12	44	sag.	2	e	Princes of *Europe*
22	C	Sexages.	13	44	sag.	3	f	may be good ar-
23	d		14	44	sag.	4	g	chers and hit
24	c		15	44	capr	5	a	right.
25	f	Matthias Ap	16	43	capr	6	b	'Tis likely that
26	g		17	43	aqua	7	c	old men and wo-
27	a		18	43	aqua	8	d	men may this
28	b	C Perigæo	19	43	pisc.	9	e	yeere dye of con-
29	C	Shrove Sun.	20	43	pisc.	10	f	sumptions.

Sunne rise at *Sandwitch.*			Sunne set.		
Day	hour	min.	Day	hour	min.
01	7	12	1	4	47
11	6	34	11	5	26
21	6	34	21	5	26

1	1	43	Moon South.
2	2	36	
3	3	27	
4	4	17	
5	5	7	
6	5	58	
7	6	52	
8	7	44	
9	8	34	
10	9	24	
11	10	14	
12	10	59	
13	11	43	
14	12	M 26	
15	0	26	
16	1	5	*Mars* hast thou now met with thine only friend
17	1	46	*Venus?* make much of her.
18	2	28	
19	3	13	*Plurimus in Cœlis amor est, connubia nulla;*
20	3	59	*Conjugia in terris plurima, nullus amor.*
21	4	50	
22	5	44	In heaven much love there is, no wedding there
23	6	39	On earth much wedding is, scarce love (I fear.)
24	7	40	
25	8	40	
26	9	38	
27	10	36	
28	11	A 31	
29	0	24	

March hath xxxi. dayes.

First quarter, 6 day, 26 min. past 11 at night.
Full Moon, 15 day, 57 min. past 3 morn. ☾ eclipsed, visib.
Last quarter, 22 day, 48 min. past 6 at night.
New Moon, 29 day, 10 of the clock before noon. Sun eccli.

1	d	David B.	21	♈	42	ari.	11	g
2	e		22		42	ari.	12	
3	f		23		42	taur	13	
4	g		24		41	taur	14	
5	a		25		41	gem	15	
6	b		26		40	gem	16	
7	☾	1 in Lent.	27		40	can.	17	
8	d		28		39	can.	18	
9	e		29	♉	39	can.	19	
10	f		0		38	leo	20	
11	g		1		38	leo	21	
12	a	Gregory ☾ Ap.	2		37	virg	22	
13	b		3		36	virg	23	
14	☾	2 in Lent.	4		35	virg	24	
15	d		5		35	libr	25	
16	e		6		34	libr	26	
17	f		7		33	scor	27	
18	g		8		32	scor	28	
19	a	☾ Diacent.	9		31	scor	29	
20	b		10		30	sag.	30	
21	☾	3 in Lent.	11		29	sag.	31	
22	d		12		28	cap.	Apr.	
23	e		13		27	cap.	2	
24	f		14		26	aqu.	3	
25	g	Annun. Mar.	15		25	aqu	4	
26	a	☾ Perigæo.	16		23	pisc.	5	
27	b		17		22	pisc	6	
28	☾	4 in Lent.	18		21	ari.	7	
29	d		19		20	ari	8	
30	e		20		19	tau.	9	
31	f		21		18	tau.	10	

Not much
change of wea
ther till about
the 7 day from
thence till the
10, more tem-
perat, yet winds
continue after-
wards more se-
rene and cleare
to the months
end.

Much wind in
March & love-
ly *May*'s faire
Sun doth whi-
ten clothes but
makes fair mai-
dens dun

☾ eclipsed in
♎ neere the
Dragons taile.
Eclipsis ☾ *in*
decem primis ♎
grandines & fe-
das alias tem-
pestates provo-
cat. Proclus.

Sun rise at *Sandwich.*				Sunne set.			
Day	hour.	min.	sec.	Day	hour.	min.	sec.
1	6	16	56	1	5	44	0
11	5	57	20	11	6	3	44
21	5	38	4	21	6	23	16

1	1	A	18
2	2		11
3	3		3
4	3		57
5	4		51
6	5		45
7	6		37
8	7		27
9	8		17
10	9		4
11	9		48
12	10		30
13	11		14
14	11		57
15	12	M	38
16	0		38
17	1		2[illegible]
18	2		6
19	2		56
20	3		49
21	4		44
22	5		40
23	6		38
24	7		35
25	8		32
26	9		25
27	10		20
28	11		12
29	0	A	5
30	0		58
31	1		51

Moon South

The Suns part darkened will be of a grey ruddish colour.

Moon Ecclips. 15. day 58 min. past 3. morn, parts darkned 10 degr 6 min. 23 sec. The part of the Moon darkned will appear of a sad ash colour.

The Type of the Sun ecclipsed 29 day The time of the greatest obsuration 4 min past 10 before noon. The parts darkned 11 deg 35 sec. at *Sandwich.* *Tantæ ingruunt tenebræ ut stellæ etiam cælo appareant non sine conuentium horrore.*

The Sun in the very degree of his exaltion is ecclipsed in *Aries*, the house of his enemy *Mars*, and neere the Dragons head and in the tenth house of the heavens. What great man in *Europe*, whether King, Prince, &c. laies all his honour in the dust, when he hath gotten ever to the very top and height of his honour and glory?

Hermes Centiloq. prop. 53 saith, That great troubles will follow, when both Sun & Moon shall be ecclipsed in one month, but especially in those places which are subjected to the ecclipses signes. And *England*, *France*, *Holland*, *&c.* are subjected to *Aries* the signe afflicted.

April hath xxx. dayes

First quarter, 5 day, 34 min. past 4 in the afternoone.
Full Moon, 13 day, 23 min. past 7 in the afternoon.
Last quarter, 21 day, 48 min. past 1 in the morning
New Moon, 27 day, 48 min. past 7 in the afternoon.

1	g		22	♈ 16	♊	11	c	Faire pleasant springing weather for many dayes together, & now and then a shower of rain, & about the middle of the month and after look for Westerly winds.
2	a	☾ Diacent.	23	14	gem	12	d	
3	b		24	13	gem	13	e	
4	c	☉ in Lent	25	11	can.	14	f	
5	d		26	10	can.	15	g	
6	e		27	8	leo	16	a	
7	f		28	7	leo	17	b	
8	g		29	5	leo	18	c	
9	a	☾ Apog.	0	4	virg	19	d	
10	b		1	2	virg	20	e	
11	c	Palm Sun.	2	0	lib.	21	f	About the 22 or 23 some showers of rain, but afterward gentle winds and pleasant weather for the most part to the months end.
12	d		2	58	lib.	22	g	
13	e		3	56	scor.	23	a	
14	f		4	54	scor.	24	b	
15	g		5	52	scor.	25	c	
16	a		6	51	sag.	26	d	
17	b		7	49	sag.	27	e	
18	c	Easter day	8	47	cap.	28	f	
19	d		9	45	cap.	29	g	
20	e		10	43	aqu.	30	a	
21	f		11	41	aqu.	May	b	
22	g		12	39	pisc.	2	c	
23	a	George ☾ per.	13	37	pisc.	3	d	When clouds arise, there May come April showers, Then after pleasant weather spring May-flowers.
24	b		14	35	ari.	4	e	
25	c	Mark Euan.	15	32	ari.	5	f	
26	d		16	30	ari.	6	g	
27	e		17	28	tau.	7	a	
28	f		18	26	tau.	8	b	
29	g		19	24	gem	9	c	
30	a		20	22	gem	10	d	

Sunne rise at *Sandwich*.				Sunne set.			
Day	hour	min.	sec.	Day	hour	min.	sec.
1	5	16	32	1	6	44	32
11	4	57	52	11	7	3	12
21	4	40	12	21	7	20	52

1	2A	46	Moone South.
2	3	42	
3	4	37	Note, That upon the 29 of *March* when the
4	5	29	Sun is eclipsed, at the time or thereabouts of
5	6	19	the greatest obscuration, it will be high water
6	7	7	at *Sandwich*, and like to be a great spring tide.
7	7	52	I therefore advise the Commissioners of Sew-
8	8	35	ers and the expenditers of the Vallies to look to
9	9	18	the breaches and to make all sure, lest they (as
10	10	0	in former times) be taken unawares. *Præmoni-*
11	10	42	*ti præmuniti.*
12	11	25	
13	12	9	
14	0M	9	
15	0	56	
16	1	52	
17	2	48	
18	3	44	
19	4	41	
20	5	36	
21	6	31	
22	7	24	
23	8	15	
24	9	6	
25	9	58	
26	10	50	
27	11	43	
28	0A	37	
29	1	33	
30	2	29	

May hath xxxi. dayes.

First quarter, 5 day, 18 min. past 10 before noone.
Full Moon, 13 day at 8 in the morning.
Last quarter, 20 day, neer 7 in the morning.
New Moon, 27 day, 6 in the morning.

1	b	Phil. & Iac.	21	19	can.	11	e	Small change of
2	c	2 after Easter	22	17	can.	12	f	aire.
3	d		23	15	leo	13	g	
4	e	Quind. Pasc.	24	12	leo	14	a	
5	f	Term begins	25	10	leo	15	b	Yet hot weather
6	g	☾ Apogæo.	26	7	vir.	16	c	
7	a		27	5	vir.	17	d	
8	b		28	3	libr.	18	e	Perhaps thun-
9	c	3 after Easter.	29	0	libr.	19	f	der about the
10	d	Tres Pasc.	29	58	libr.	20	g	13 or 14 day.
11	e		♎	55	scor.	21	a	
12	f		1	33	scor.	22	b	From thence
13	g		2	50	sag.	23	c	temperate until
14	a		3	47	sag.	24	d	the 20 day.
15	b		4	45	cap	25	e	
16	c	4 after Easter	5	42	cap.	26	f	About the 26
17	d	Mens. Pasch.	6	40	cap.	27	g	day, and so to
18	e		7	37	aqu	28	a	the months end
19	f		8	34	aqu.	29	b	dry and cooling
20	g	☾ Perigæo.	9	32	pis.	30	c	winds, and per-
21	a		10	29	pis.	31	d	haps thunder,
22	b		11	26	ari.	Iun.	e	lightning and
23	c	Rogation	12	23	ari.	2	f	rain.
24	d	Quind. Pisch.	13	21	taur	3	g	
25	e		14	18	taur	4	a	The Parlia-
26	f		15	15	gem	5	b	ment and Army
27	g	Ascension.	16	12	gem	6	c	well met, I hope
28	a	Crastin. Ascen.	17	9	can.	7	d	they will well
29	b		18	7	can.	8	e	accord.
30	c	6 after Eas.	19	4	can.	9	f	
31	d	Terme ends	20	1	leo	10	g	

Sunne rise at *Sandwich.*				Sunne set.			
Day	hour.	min.	sec.	Day	hour.	min.	sec.
1	4	23	52	1	7	37	4
11	4	9	48	11	7	50	40
21	3	58	28	21	8	2	4

| | | | |

June hath xxx. dayes.

First quarter, 4 day, 18 min. past 3 in the morning.
Full Moon, 11 day, 10 min past 6 afternoon.
Last quar, 18 day at noon.
New Moon, 25 day, 3 quarters past 5 afternoon.

1	e		20	♊	58	leo	11	a	Likely tem-
2	f		21		55	virg	12	b	perate weather
3	g	☾ Apog.	22		53	virg	13	c	till about the 17
4	a		23		50	virg	14	d	day, then like to
5	b		24		47	libr.	15	e	be very hot wea-
6	c	Whitsunday.	25		44	libr.	16	f	ther, but after
7	d		26		41	sco.	17	g	25 day more
8	e		27		38	scor.	18	a	temperate unto
9	f		28		35	scor.	19	b	the months end
10	g		29	♋	32	sag	20	c	
11	a		9		29	sag.	21	d	
12	b		1		27	capr	22	e	
13	c	Trin. sunday	2		24	capr	23	f	
14	d	Craſt. Trin.	3		21	aqu.	24	g	
15	e		4		18	qu	25	a	
16	f	☾ Perigæo.	5		15	piſc.	26	b	Now ſheare
17	g	Corpus Chriſt	6		12	piſc.	27	c	your ſheep, but
18	a	Term begins	7		9	ari.	28	d	make them not
19	b		8		6	ari.	29	e	to bleed.
20	c	1 after Trin.	9		3	taur	30	f	
21	d	Octab. Trin.	10		0	taur	July	g	
22	e		10		57	gem	2	a	Good huſ-
23	f		11		54	gem	3	b	bands now their
24	g	St. John Ba.	12		51	gem	4	c	corne and fruits
25	a		13		48	can.	5	d	do weed.
26	b		14		46	can	6	e	
27	c	2 after Trin.	15		43	leo	7	f	
28	d	Quind. Trin.	16		40	leo	8	g	
29	e	Peter & Paul	17		37	virg	9	a	
30	f	☾ Apogæo.	18		34	virg	10	b	

Sunne rise at *Sandwich.*				Sunne set.			
Day	hour.	min.	sec.	Day	hour.	min.	sec.
1	3	50	40	1	8	9	36
11	3	48	24	11	8	11	36
21	3	50	56	21	8	8	48

1	4	A	27
2	5		12
3	5		53
4	6		32
5	7		12
6	7		53
7	8		40
8	9		27
9	10		18
10	11		10
11	12		19
12	0	M	19
13	1		17
14	2		17
15	3		10
16	4		3
17	4		55
18	5		42
19	6		10
20	7		21
21	8		13
22	9		6
23	10		0
24	10		54
25	11		51
26	0	A	48
27	1		32
28	2		15
29	2		58
30	3		41

Moon south

The longest day which with us at *Sandwich.* is 16 hours, 23 minutes, 12 seconds. But at *London* it is 16 hours 25 min. 44. seconds, where it is 2 min. 32 sec. longer then at *Sandwich*. But the Sun then doth rise this yeer at *London* at 3 of the clock 47 min. and 8 sec. after. But at *Sandwich* at 3 ho. 48. min. 24 sec.

First quarter, 3 day, 12 min. past 8 at night.
Full Moon, 11 day, neer 3 in the morning.
Last quarter, 17 day, 48 min. past 5 afternoon.
New Moon, 25 day, 32 min. past 7 in the morning.

1	g		19	30	31	virg	11	c
2	a			20	28	lib	12	d
3	b			21	25	lib	13	e
4	c	3 after Trin.		22	23	lib	14	f
5	d	Ties Trin.		23	20	scor	15	g
6	e			24	17	scor	16	a
7	f	Terme endes		25	14	sag	17	b
8	g			26	11	sag	18	c
9	a			27	8	cap	19	d
10	b			28	6	cap	20	e
11	c	4 after Trin.		29	3	aqu	21	f
12	d			☌	0	aqu	22	g
13	e			0	57	pisc.	23	a
14	f	☾ Perig.		1	55	pisc.	24	b
15	g			2	52	ari	25	c
16	a			3	49	ari	26	d
17	b			4	47	tau	27	e
18	c	5 after Trin.		5	44	tau	28	f
19	d	Dog days beg		6	41	tau	29	g
20	e			7	39	gem	30	a
21	f			8	36	gem	31	b
22	g			9	33	can	Aug	c
23	a			10	31	can	2	d
24	b			11	28	leo	3	e
25	c	St. James Ap		12	26	leo	4	f
26	d			13	23	leo	5	g
27	e			14	21	virg	6	a
28	f	☾ Apogæo		15	19	virg	7	b
29	g			16	16	lib	8	c
30	a			17	14	lib	9	d
31	b			18	11	lib	10	e

Much wind & rainy weather many times this month withall exceeding hot weather.

About the 15 16 or 17 haile and thunder.

Harvest men in fair weather sleep not too long.

Post est occasio calva.

Saturn ! thou disturber of Church and State. Be not angry, draw not thy sword. Thou meetest now with thy Lord chief in his own sear. Dost yet acknowledge the authority of the Magistrate.

Sunne rise at *Sandwich.*				Sunne set.			
Day	hour.	min.	sec.	Day	hour.	min.	sec.
1	3	57	52	1	8	1	28
11	4	8	52	11	7	50	20
21	4	22	48	21	7	36	16

1	4	A	21
2	5		1
3	5		43
4	6		26
5	7		13
6	8		0
7	8		50
8	9		47
9	10		46
10	11		46
11	12		46
12	0	M	45
13	1		44
14	2		46
15	3		37
16	4		27
17	5		17
18	6		9
19	7		1
20	7		54
21	8		47
22	9		40
23	10		30
24	11		21
25	0	A	06
26	0		51
27	1		37
28	2		17
29	2		58
30	3		42
31	4		26

Moon South.

August hath xxxi dayes.

First quarter, 2 day, 18 min. past 11 before noone.
Full Moon, 9 day, 40 min. past 10 before noone.
Last quarter, 16 day, at 2 in the morning.
New Moon, 23 day, 50 min. past 10 at night.

1	☾	Lammas	19 ♌	9	scor	11	f
2	d		20	6	scor	12	g
3	e		21	4	sag.	13	a
4	f		22	2	sag.	14	b
5	g		23	0	sag.	15	c
6	a		23	57	cap.	16	d
7	b		24	55	cap.	17	e
8	☾	8 after Trin.	25	53	aqu	18	f
9	d		26	50	aqu	19	g
10	e		27	48	pisc.	20	a
11	f	☾ Perigæo.	28	46	pisc.	21	b
12	g		29	44	ari.	22	c
13	a		0 ♍	42	ari.	23	d
14	b		1	40	taur	24	e
15	☾	9 after Trin.	2	38	taur	25	f
16	d		3	36	gem	26	g
17	e		4	34	gem	27	a
18	f		5	32	can.	28	b
19	g		6	30	can	29	c
20	a		7	28	can.	30	d
21	b		8	26	leo	31	e
22	☾	10 after Trin.	9	25	leo	Sep.	f
23	d		10	23	virg	2	g
24	e	Barthol. Ap.	11	21	virg	3	a
25	f	☾ Apogæo.	12	20	virg	4	b
36	g		13	18	libr.	5	c
27	a		14	16	libr.	6	d
28	b	Dog days end	15	15	scor.	7	e
29	☾	11 after Trin.	16	13	scor.	8	f
30	d		17	11	sag.	9	g
31	e		18	10	sag.	10	a

The great dog begins now to rise Cosmical, the Moon in the latter end of *Libra* and beginning of *Scorpio*.

England! prepare thy selfe, Heaven threatens a great dirth & great plagues, *Diaph.*

The beginning of this month may be pretty temperat

But look for winds, thunder, and haile about the ninth or tenth dayes of this month, but after the 22 day more temperate to the months end.

Sunne rise at *Sandwich*.				Sunne set.			
Day	hour.	min.	sec.	Day	hour.	min.	sec.
1	4	40	36	1	7	18	20
11	4	58	20	11	7	0	44
22	5	16	48	21	6	42	8

1	♌	9	Moon South
2	5	53	
3	6	45	The effects of the Eccliplse of the Sunne in
4	7	37	*March* laſt begin now to operate in the Meridi-
5	8	34	an of
6	9	31	*Sandwich*! *Aſpice cælum*; Look up into the
7	10	30	heavens: And before the effects of this Eccliplse
8	11	29	be ended thou maiſt ſee ſtrange ſights there
9	12	32	South-Eaſterly.
10	♍ 0	32	
11	1	27	
12	2	22	
13	3	16	
14	4	11	*Saturne*! art thou ſtill in the ſeate of noble
15	5	3	*Sol*; and doth *Mars* thine enemy finde thee
16	5	55	there, and whiſpers a tale in thine eare? Di-
17	6	48	ſturbe us no longer. Take heed! within theſe
18	7	42	five yeeres thou maiſt finde this true; *Multa re-*
19	8	32	*naſcentur, quæ nunc cecidêre, cadentque*
20	9	22	*Quæ nunc in pretio, quæ nunc in honore*
21	10	9	— { *Cavete.*
22	10	57	{ *Valete.*
23	11	43	
24	♎ 0	24	
25	1	3	
26	1	45	
27	2	28	
28	3	11	
29	3	56	
30	4	46	
31	5	37	

September hath xxx. dayes.

First quarter, 1 day, 16 min. past 1 in the morning.
Full Moon, 7 day 25 min. past 6 afternoon. Ecclipsed.
Last quarter, 14 pay, 40 min. past 1 afternoon.
New *Moon*, 22 day, at 4 afternoon. ☉ ecclipſ. not viſible.
First quarter, laſt day a little after high noon.

1	f		19	♍	8	ſagi	11	b
2	g		20		7	cap	12	c
3	a		21		5	cap	13	d
4	b		22		4	aqu	14	e
5	c	12 after Trin,	23		3	aqu	15	f
6	d		24		1	piſc	16	g
7	e	☾ Perigæo.	25		0	piſc	17	a
8	f		25		59	ari	18	b
9	g		6		57	ari	19	c
10	a		27		56	tau	20	d
11	b		28		55	tau	21	e
12	c	13 after Trin.	29		54	gem	22	f
13	d		♎		53	gem	23	g
14	e		1		52	can	24	a
15	f		2		51	can	25	b
16	g		3		50	can	26	c
17	a		4		49	leo	27	d
18	b		5		48	leo	28	e
19	c	14 after Trin.	6		47	vir	29	f
20	d	☾ Apogæo.	7		46	vir	30	g
21	e	St. Matth. Ap	8		46	vir	Oct.	a
22	f		9		45	lib	2	b
23	g		10		44	lib	3	c
24	a		11		44	ſcor	4	d
25	b		12		43	ſcor	5	e
26	c	15 after Trin	13		43	ſcor	6	f
27	d		14		42	ſag	7	g
28	e		15		41	ſag	8	a
29	f	Mich. Arch.	16		41	cap	9	b
30	g		17		40	cap	10	c

Fair weather begins the month but after the 5 day look for ſome raine or moiſt weather for the moſt part to the months end.

Seventh day, the Moon ecliſſed in ♓ 25 deg. 15 min. neer the Dragons head & in *Perigæo*, and therefore neareſt to the center of the earth: She will appear of a great bigneſſe.

22 day, the Sun ecclipſed in ♎ 10 degr. *ferè* neer the ☌ but not viſible with us, though he be above our Horizon.

☉ rise at *Sandwich.*				☉ set at *Sandwich.*			
Day	hour.	min.	sec.	Day	hour.	min.	sec.
1	5	38	0	1	6	21	4
11	5	57	20	11	6	1	36
21	6	16	48	21	5	42	8

1	6A	32
2	7	27
3	8	24
4	9	20
5	10	16
6	11	12
7	12	8
8	0M	8
9	1	4
10	2	0
11	3	3
12	3	56
13	4	53
14	5	46
15	6	40
16	7	28
17	8	19
18	9	3
19	9	48
20	10	30
21	11	12
22	11	53
23	0A	35
24	1	17
25	1	59
26	2	40
27	3	41
28	4	25
29	5	29
30	6	24

Moon South.

The Type of the Moon Eclipsed half an hour past six at night the seventh day: parts darkened 10 degr. 18. min. 42 seconds. The part darkened will appear of a black colour with a very little paleneſſe if any. But we at *Sandwich* and *Dover* can not ſee the beginning, becauſe it begins before Sunne ſet, but the middle and end we may, if the aire be clear, which I doubt.

The 14 day anciently called *Holy-Croſſe* is the Fayre at *Goodneſtowne* neer *Sandwich* for horſe and cattle.

The 21 day is the Fayre at *Eaſtry* for horſe and cattle.

October hath xxxi dayes.

Full Moon, 7 day, 30 min. past 3 in the morning.
Last quarter 14 day, 23 min. past 8 in the morning.
New Moon, 22 day, 9 min. past 9 in the morning.
First quarter, 29 day, 28 min. past 9 at night.

1	a		18	♎ 40	aqu.	11	d	Cold and dry
2	b		19	40	aqu.	12	e	weather at the
3	c	16 after Trin	20	39	aqu.	13	f	begining of this
4	d		21	39	pisc	14	g	moneth and so
5	e	☾ Perigæo.	22	39	pisc	15	a	continues for the
6	f		23	39	ari.	16	b	most part till a
7	g		24	39	ari.	17	c	bout 21 day, then
8	a		25	38	taur	18	d	Easterly winds
9	b		26	38	taur	19	e	with cold raine
10	c	17 after Trin.	27	38	gem	20	f	even to the
11	d		28	38	gem	21	g	months end.
12	e		29	38	canc	22	a	
13	f		0 ♏	38	can	23	b	
14	g		1	38	leo	24	c	
15	a		2	38	leo	25	d	
16	b		3	38	leo	26	e	
17	c	18 after Trin	4	38	virg	27	f	*Non vacat ex-*
18	d	☾ Apogæo	5	38	virg	28	g	*ienis rebus adeß.*
19	e		6	38	libr	29	a	*Jovi.*
20	f	Tres Mich.	7	39	libr	30	b	
21	g		8	39	libr	31	c	
22	a		9	40	scor	Nov	d	
23	b	Term begins	10	40	scor	2	e	
24	c	19 after Trin.	11	40	sagi	3	f	
25	d		12	41	sagi	4	g	
26	e		13	41	sagi	5	a	
27	f	Mens. Mich.	14	42	capr	6	b	
28	g	Sim. & Jude	15	42	capr	7	c	
29	a		16	43	aqu	8	d	
30	b		17	43	aqu	9	e	
31	c	20 after Trin.	18	43	pisc	10	f	

Sunne rise at *Sandwich*.				Sunne set.			
Day	hour.	min.	sec.	Day	hour.	min.	sec.
1	6	36	36	1	5	22	36
11	6	55	52	11	5	3	20
21	7	14	44	21	4	44	44

1	7	A 19	Moon South.
2	8	14	
3	9	8	
4	10	2	
5	10	55	
6	11	55	
7	12	M 52	
8	0	52	
9	1	48	
10	2	44	
11	3	41	
12	4	39	
13	5	28	
14	6	17	
15	7	6	
16	7	51	
17	8	34	
18	9	16	18 Luke Ebang.
19	9	56	
20	10	38	
21	11	21	
22	0	A 7	
23	0	52	
24	1	39	
25	2	20	
26	3	1	
27	4	44	
28	5	32	
29	6	20	
30	7	15	
31	8	4	

November hath xxx dayes.

Full Moon, 5 day, 10 min. past 2 in the afternoon.
Last quarter, 12 day, about midnight.
New Moon, 21 day, 50 min. past 1 in the morning.
First quarter, 28 day, 3 min past 6 in the morning.

1	d	All Saints	19	♍	44	pisc	11	g
2	e	Omnium anim	20		45	ari	12	a
3	f	Crastino anim.	21		46	ari	13	b
4	g		22		46	tau	14	c
5	a	Papist conspi.	23		47	tau	15	d
6	b		24		48	gem	16	e
7	☾	21 after trin.	25		48	gem	17	f
8	d		26		49	can	18	g
9	e		27		50	can	19	a
10	f		28		51	co	20	b
11	g	Martin B.	29		52	leo	21	c
12	a	Crastino mart.	0	♎	53	co	22	d
13	b		1		54	virg	23	e
14	☾	22 after Trin.	2		55	irg	24	f
15	d		3		56	ib	25	g
16	e		4		57	ib	26	a
17	f		5		58	ib	27	b
18	g	Octab. marti.	6		59	scor	28	c
19	a		7		59	scor	29	d
20	b		9		0	sag	30	e
21	☾	23 after Trin.	10		2	ag	Dec	f
22	d		11		3	sag	2	g
23	e		12		4	cap	3	a
24	f		13		5	cap	4	b
25	g	Quind. mart.	14		6	aqu	5	c
26	a		15		7	aqu	6	d
27	b		16		8	pisc	7	e
28	☾	Advent sund.	17		9	pisc	8	f
29	d	Terme ends	18		11	ari	9	g
30	e	S. Andrew Ap	19		12	ati	10	a

Not much alteration of weather untill the 4 day, about which time the Dog setteth, then expect southerly winds yet cold winter like and frosty weather for the most part til the months end.

Heu! quis non tanti cinxerunt æthera nimbi.

Sunne rise at *Sandwich*.				Sunne set.			
Day	hour	min.	sec.	Day	hour	min.	sec.
1	7	34	12	1	4	25	40
11	7	48	56	11	4	10	24
21	8	0	58	21	3	58	28

1	8	A 50	Moon South.
2	9	37	
3	10	30	
4	11	24	
5	12	23	
6	0	M 23	
7	1	16	
8	2	25	
9	3	18	
10	4	11	
11	4	57	*Dover* Fayre.
12	5	41	
13	6	25	
14	7	06	
15	7	48	
16	8	29	
17	9	14	
18	9	59	
19	10	44	
20	11	29	
21	0	A 23	
22	1	17	
23	2	11	23 *Sandwich* Fayre.
24	3	5	
25	4	0	
26	4	54	
27	5	43	
28	6	32	
29	7	22	
30	8	11	

December hath xxxi. dayes.

Full Moon, the 5 day, 40 min. past 2 in the morning.
Last quarter, 12 day, 40 min. past 9 at night.
New Moon, 20 day, 18 min. past 5 at night.
First quarter, 27 day, 30 min. past 2 afternoon.

1	f		20	13	tau	11	b	The better
2	g		21	14	tau	12	c	half of this
3	a		22	16	gem	13	d	moneth is like
4	b		23	17	gem	14	e	to be windy and
5	c	1 after Advent	24	18	gem	15	f	snowy or some
6	d		25	19	canc	16	g	cold raine or
7	e		26	20	canc	17	a	sleete and so
8	f		27	22	leo	18	b	right winter
9	g		28	23	leo	19	c	weather cold &
10	a		29	24	virg	20	d	moist. But af-
11	b		☌	26	virg	21	e	ter the 21 day
12	c	2 after advent	1	27	virg	22	f	cold, frosty, yet
13	d		2	28	lib	23	g	fair and plea-
14	e		3	29	lib	24	a	sant for the most
15	f		4	31	scor	25	b	part to the
16	g		5	32	scor	26	c	months end, and
17	a		6	33	scor	27	d	so Autum like
18	b		7	35	sag	28	e	weather, cold
19	c	3 after Advent	8	36	sag	29	f	and dry.
20	d		9	37	cap	30	g	
21	e	St. Tho Ap.	10	38	cap	31	a	*Ante focum si*
22	f		11	40	aqu	Jan.	b	*frigus erit, si*
23	g		12	41	aqu	2	c	*messis sub umbra.*
24	a		23	42	pisc	3	d	
25	b	Natiu. Christ	14	43	pisc	4	e	
26	c	Steph. Prot.	15	45	ari	5	f	The Box. Pray
27	d	John	16	46	ari	6	g	remember the
28	e	Innocents	17	47	ari	7	a	poore.
29	f		18	49	tau	8	b	
30	g		19	50	tau	9	c	
31	a		20	51	gem	10	d	

Sunne rise at *Sandwich*.				Sunne set.			
Day	hour.	min.	sec.	Day	hour.	min.	sec.
1	8	9	0	1	3	50	52
11	8	11	44	11	3	48	24
21	8	8	40	21	3	51	28

1	9A	5
2	9	59
3	10	53
4	11	36
5	12M	19
6	0	19
7	1	18
8	2	16
9	3	25
10	4	7
11	4	48
12	5	30
13	6	10
14	6	51
15	7	31
16	8	12
17	9	7
18	10	1
19	10	52
20	11	48
21	0A	43
22	1	39
23	2	32
24	3	24
25	4	17
26	5	6
27	5	55
28	6	46
29	7	35
30	8	25
31	9	24

Moon South.

Radices mediarum motuum Planetarum ad Meridiem *Sanduvichi. An jnxta* 1652. *Harmonicon Cæleſte.*

	S	d	′	″
Longitudo primæ Arietis.	0	28	20	17
Longitu media ☉	9	19	36	44
Apogæum Solis.	3	6	35	51
Longit. media Lunæ.	9	14	12	48
Apogæum ☾.	4	24	15	57
Nodus Aſcendens ☾.	0	15	11	21
Lmg. media Saturni.	3	22	22	1
Aphelion.	8	27	8	15
Nodus Aſcendens, vel Borew.	3	21	3	14
Long. media Jovis	8	29	10	24
Aphelion.	6	8	45	25
Nodus Aſcendens.	3	5	37	3
Longitudo media Martis	11	18	36	25
Aphelion.	5	0	1	58
Nodus Aſcendens	1	17	20	34
Longitudo media Veneris.	10	14	32	21
Aphelion.	10	5	9	4
Nodus Aſcendens.	2	13	30	0
Longitudo media Mercurii	11	1	41	57
Aphelion Mercurii.	8	14	17	0
Nodus Aſcendens.	1	13	46	30

Cœlorum Declaratio.

1652.

BEcause some living about Sandwich and pretending to the Mathematicks, do blame me for making the elevation of the Pole there to be 51d. 18'. I make bold in the first place to shew them their error, in vindication of the truth (to let pass many carefull observations by instruments at several times in sundry years past at Ash, about a mile and half Westward of Sandwich where I found it to be 51 degrees and about $\frac{1}{4}$ I come to the calculation for the benefit of all studious herein) London Latitude hath been formerly found to be 51d 32'. The difference of Longitude between London and Sandwich 1d. 15'. in the Æquator, and the distance 49 minuts or miles. Here in an obligue Spherical triangle are given two sides and an Angle opposite against one of them, to finde the third side. Then thus by the Logarithmes.

London Latitude.	51d 32' 0''	t c.	99000865
Difference of Longitude	1 15 0	sc.	99998966
The first Arch	38. 27. 36.	t.	98999831

Then secondly.	d ' ''	co. ar.	
London Latitude	51. 32	c. Sin.	01062548.
Distance	0. 49. 0.	sc.	99999559
First Arch	38. 27 36.	sc:	98937853
The second Arch	14. 48.	sc.	99999960
Sum of first & sec. arch.	38. 42. 24.		

whose complement to 90d. is 51. 17. 36. the elevation of the Pole at *Sandwich*. Then *Dover* lies 8 miles full South from *Sandwich*. Therefore the elevation at *Dover* is 51d. 10'.

How with speed and ease to measure round Tapering Timber according to the true rules of Geometry.

BEcause the true way of measuring round Tapering Timber is (unknown to and therefore) never practised by our vulgar timber measurers, but an absurd, ridiculous, and erroneous way, no way consentaneous to truth, to the abuse of the noble Science of Geometry, whereby all men whosoever are wonderfully wronged, be they buyers, sellers, or otherwise Mechanicks, or workmen in Timber: I have thought good here to shew the true way, wherein I shall be very brief, in regard I have some years since written concerning the same subject, and have plainly demonstrated their erroneous working, and proved the true way, both by Arithmeticall operation, and Geometricall demonstration, and do now shortly intend (Deo permittente) to publish the same for the benefit of all sorts of men. A work never heretofore done by any man.

I come to the matter in hand.

A round Tapering piece of Timber is the Segment of a Cone; and therefore to measure it, we must reduce it to a Cyllender. To do this we must first finde out the Axis; for the Axis of a Solid is the line measuring, as we may finde in Euclid; Ramus lib. 22 &c. but it will be too tedious now to shew the investigation of this, and therefore I let it pass. Secondly, (which is more materiall) we must finde out the mean Geometricall between the two girts at the greater and lesser end of the piece of Timber. To do this, take this Proposition, That the one third part of the square of the difference of the two girts added to the square of their

their Arithmeticall proportionall, is the square of their true Geometricall proportionall.

An Example makes all plain.

The Axis or length 18 feet.

The ½ or quarter of the girt at the greater end 8 inches, and at the lesser end 6 inches. Now 8 multiplied by 6, the product is 48 their Arithmeticall proportionall: next take 6 out of 8, remains 2. their difference, the square whereof is 4 whose ⅓ is 1⅓ added to 48, makes 49⅓ their Geometricall proportionall, which reduced into thirds, is 148. Then if you work by vulgar Arithmetick, always say, As 1 is to 29461
⅓ is the mean Geometricall proportionall reduced into thirds } 148
to a first number 4360228
Then secondly, As 10000000
is to the first number 4360228
So is the Axis or length 18 feet——

To the true contents in feet 7 8484104
10000000

So that such a piece of Timber according to the true Rules of Geometry, contains 7 cubicall feet and 3 quarters of a foot, and almost half a quarter of a foot more; whereas by their old beaten false way, it contains 6 feet and just half a quarter of a foot. Where they, wide of the truth, in such a little piece of Timber, one foot and half, and half a quarter. So that I have known them out, in a Load of Timber, sometimes 12, 14, nay sometime 16 Cubicall feet: an error sensible enough.

A Prognostication.

Of the foure Quarters of the Yeare.

1. The Spring Quarter

Begins when the Sun (secundum antiquos) enters into Aries, or the earth (secundum recentiores Astronomos) into Libra, which will be in our Meridian of Sandwich, according to the middle time of the true ingresse (juxta Harmonicon Cœleste) upon the 9 day of March, 27 min. 23. sec. after 8 of the clock at night.

At which time the Sunnes

	s	d	′	″
Middle Longitude	11.	27	58	8
Apogæon substr.	3	6	36	2
The Anomaly rem.	8	21	22	6
Equation add		2	1	52
True longitude of sun. ♈		00	00	00

	day	hour	′	
The Middle time March	9	8	27	23
Equation of time substract			4	4
Apparent time. March	9	8	23	19

The naturall quality of this Quarter is hot and moist. ☊ 4d Culminates, and ♎ 25d Ascends.

2. The Summer Quarter

Begins when the Sun enters into Cancr, or the earth into Capricorn, which will be accordingly upon June, day 10 hour 11. min. 32. night, Equation of time substract 26 seconds, remains the apparent time, June day 10. hour 11. min 31. seconds 34. at night. The quality of this Quarter is hot and dry. ♐ 23 culmin. ♓ 12. ascend.

3. Autumne

Begins when the Sun enters into Libra, or the earth

earth into Aries, which will be upon the 12 of September, 25 min. past 2 in the afternoon; to which add the equation of time, 4′. 4″. we have the apparent time of the true ingresse, the 12 of September, 29 min. 4 sec. past 2 of the clock in the afternoon The quality of this Quarter is cold and dry. ☽ 9. culm. ♍ 3 ascend.

4. Winter

Begins when the Sun enters into Capricorn, or the earth into Cancer, which will be upon the 11. day of December, 56 minuts. 30 sec. past 1 in the morning, to which if we add the Equation of time 26 seconds, the apparent time will be

Decemb. day 11 min. 56. sec. 56. past 1. morn.

The quality of this quarter is cold and moist, ☉ 27 d culm. ♎ 20 d ascend.

How to erect a Scheme of the Heavens exactly and speedily by Trigonometrical Arithmetick only.

To do this, take these propositions.

1. Proposition

To find the elevation of the Pole above the 11. and 3 houses, and the 12 and 2 houses..

1. For the 11 and 3. Houses

As Radius.
to the Tangent of the elevation of the Pole above the Horizon. } 51 d. 18. t. 00962856
So is the sign of the circle of position from the Medium or Imum Cœli. } 30 d. 01 s. t. 96989700.
To the tangent of the elevation of the Pole above the 11. and 3. Houses sub latitudine 51. d. 18. } 31 d. 58′. t. 97952556

Secondly for the 12 and 2 Houses.

As Radius
To the Tangent of 51 d. 18′. r. 00962856.
So the sine of Circle of Position, &c. 60. 0. s. 99375306.
To the tangent of the elevat. 47. 13. 100338162

2. Proposition.

To finde the Right Ascension of the *Medium Cœli*, for the Ascendent of every House.

Examples will make this plain.

To erect a Scheme of the Heavens for the Eclipse of the Sun the 29 day of March, hereafter opened for the elevation of the Pole at Sandwich, 51. d. 18′.

Right ascension of the Sun	17 d.	45′.	32″
Right ascension of the hour.	331	33	45.
Sum is the right ascension of the Medium Cœli for the ascendent of the first House, sub lat. 51. 18.	349 d.	19′.	17″
From which subtract	60.	0.	0.
Remains the Right ascension, &c. of 11. House sub. lat. 31 d. 58′.	289.	19.	17.
To this add 30	30.		
Sum is the right Ascension, &c. of 12 House, sub. lat. 47. 13.	319.	19.	17.
To this add 60.	60		
Right ascens. &c. of 2 House	19.	19.	17
To this add	30.		
Sum right ascens. &c. of 3 hous.	49.	19.	17.

3. Propoſition.

To find the diſtance of the Arch Ecliptick culminating from the Zenith.

If the right Aſcenſion be above 180 d. the declination is ſouth, and then the elevation of the pole muſt be added to the declination But if it be under 180 d. the declination is nozth; then the declination muſt be ſubſtracted from the elevation: ſo the ſum.oz remainder will be the diſtance of the Arch Ecliptick culminating from the Zenith.

4. Propoſition.

To find the diſtance of the arch Ecliptick culminating from the 90 degree of the Ecliptick, and thereby the Aſcendent of every houſe, accor.ing to the elevation of the Pole above every Houſe.

To do this: Having found the Arch Ecliptick culminating, and its declination, and its diſtance from the Zenith, Say,

As the Tangent Complement of the Declination
Is to the Tangent compl. of the arch Ecliptick culminating,
So is the Tangent of its diſtance from the Zenith
To the Tangent of its diſtance from the 90 degree.

5. Propoſition:

To find the Aſcendent.

If the Right Aſcenſion be above 90 d. and under 270 d. then from the Arch Ecliptick culminating, ſubſtract its diſtance from the 90 d. But if it be above 270 d. and u.der 90 d. then add the ſame. &c. ſo the ſumme oz remainder will be the 90 d. of the Ecliptick; to which if you add 3 ſignes, you have the Aſcendent oz point riſing in the Cuſp of every Houſe reſpectively, according to the elevation of the Pole above the Cuſp of every Houſe.

The Illuſtration by Example.

Foz the Cuſp. of 11. Houſe. Polus 31 d, 58'

The

The right Ascension 289 d. 19 '. By which is found the Arch Ecliptick answering thereto, and the declination of it by the first Proposition in my Ephemeris, for 1651. But that you may have readily the Tangents, and so work the more truly, I work thus Logarithmetically.

	d:	'	''		coar.
Greatest Declination	23	31	30	Sc.	00376847.
Right Ascension.	289	19	0	t.	04552852.
The Arch Ecliptick	287	50		t.	104929699.

Secondly For the Declination.

	d.	'.	''.		
Right Ascension	289	19	0	Sin.	99748361
Greatest Declination	23	31	0	ta.	96388199
Declination South.	22	20		ta.	96136560
Elev. of the Pole add	31	58	by the third Proposition.		
The summe will be	54	18	the distance of the Arch-Ecliptick culminating from the Zenith		

Lastly, for the distance of the arch Ecliptick culminating from the 90 d. of the Ecliptick.

By the fourth Proposition.

	d	'		
The Declination	22	20	t.	96136560
Arch Ecliptick Culm.	287	50	t.c	95070301
Distance from the Zenith	54	18	t.	01435292
The dist. from the 90 d.	10	24	t.	92642153
By the 5. Propos. 278	50	The Arch Culm ald		
Sum the 90 d. 298	14	To which add three sign's.		
Or else 90 d. 90	0			
The sum is 388	14	divided by 30 degrees.		

The quotient is 12 signe's, 28. degrees, 14. minutes.
That is, Aries 28 degrees, 14. minutes. The Cusp of 11 House.

So for the Cusp of the 12 House, Polus 47 d. 13' work in all respects as before, observing the fore-said Propositions, and it will be ♒ 17 d. 37'.

And

And the Cusp of 1. House, Polus 51 d. 18'. will be ♋ 18 d 29'. and of the 10. House ♓ 18. 23

The Cusp of the second House (Polus 47 13.) will be ♌ 7 d. 52. and of the third House (Polus 41 d. 38') will be ♌ 25 d 22'. And for the other take their opposite signes.

This way is most exact, and will be very speedy and easie after a little practice; and it is called the Rationalis modus of Johannes Moliter, alias, de Regio Monte, or Regiomontanus.

Herein I have been very brief, in regard I have written about seven years now since, divers Astronomicall Propositions, fit for all studious herein, easily to be understood, after such a plain way, as never any yet hath done before me, and shall ere long (God willing) publish the same for the benefit of all our studious Tyro's in these Arts; & if I may be suffered as wel as others, to cast my mite into the Mathematicall Treasury, I am certain and confident (I cannot diminish from it) I may add to it.

Of the Eclipses.

There will be foure Eclipses this yeare: Two of the Sunne, and two of the Moone: both are eclipsed in March and September. But the last of the Sunne is upon Wednesday the 22 of September, at foure of the clock in the after-noon, which cannot be seen of us, and therefore I passe it by.

The first in order visible is of the Moon, much according to the mean time of the true opposition in the Meridian of Sandwich, will be upon Munday the 15 day of March, 57', 42'' after three of the clock in the morning: at which time their motions will be as followeth, juxta Harmonicon Cœleste of Mr Wing.

Mid.

	s	d	′	″		s	d	′	″
Mid. Long.	-	3	12	19	*Mid.long.*	6	8	1	48
Apog. subst.	3	6	36	3	*Apog. sub*	5	2	29	4
Anomaly.	8	26	36	16	*Anomaly.*	1	5	32	44
Æquat. add.		2	2	50	*Æqu sub*		2	46	39
☉ *true place*	♈	5	15	9	☾ *place.*	♎	5	15	9

		day	h.	′	′.
Mean time of the opposition.	March	14	6	7	35
Intervall add		0	9	30	7
Mean time of the true ☍	March	14	15	57	42
Æquation of time subst.				2	12
Remaines the apparent time.	March.	14	15	55	10

	s	d	′	″
Anomaly of ☉ coequated	8	27	36	57
Anom. of ☾ coequated	1	4	4	15
The Horary motion of ☉			2	29
The Horary motion of ☾			30	17
The Horary motion of ☾ from ☉			27	48
Horizontall Parallax of ☉			2	21
Horizontall Parallax of ☾			56	5

True place of the ☉	♈	5	15	9
True place of the ☾ in her orbite	♎	5	15	9
Motion of ☾ Node sub.	0	11	14	8
True motion of ☾ latitude	5	24.	1	1
True latit. of ☾ North Desc.	0	0	31	14
Reduction add			1	27
Place of the ☾ in Ecliptick	♎	5	16	36
Reduction divided by the Horary motion of ☾ from ☉. The quotient subst.			3	7

		day	h.	first.	sec.
Therefore the exact time of the true opposition of the *Meridian Sandwich*	March	14	15	52	13

Sum of Hor. Par. of ☉ and ☾	0	0	53	26
Semidiameter of ☉ subst.			16	28
rem. The Semidiameter of earths shadow			41	58
Semidiameter of ☾ add			15	41
Sum of the two Semidiameters			57	39
Latitude of ☾ substract			31	14
rem. The parts deficient	0	0	26	25

The latitude of the Moon is less then the sum of the two Semidiameters, therefore the Moon will be Eclipsed at this opposition.

	d	′	″
Digits eclipsed	10	6	23
Minures of Incidence	0	48	27
Time of Incidence	1	44	35
☾ latitude gives the distance of the ☌ from the greatest obscuration	0	2	43
Divided by the Hor. motion of ☾ from ☉, the quotient is space of the true ☌ from the greatest obscuration to be added	0	51	52″

Therefore in the Meridians of *Sandwich* and *Dover*

		hor.	′	″
Beginning	March 15 day, morning.	2	13	30
Visible,		3	52	13
Greatest obscuration		4	58	5
End.		5	42	40
Totall duration.		3	29	10

The second Eclipse of the Moon (though the third in order) by the Tables aforesaid, is according to the exact time of the apparent opposition in the Meridian of *Sandwich*, upon the 7 day of *September*, 24 min. 52 seconds after 6 of the clock at night.

The

		d	l	ll
The Sunne being then in		♍ 25	15	38
The Moon in		♓ 25	15	38
The parts deficient			29	13
Minutes of Incidence			53	35
Time of Incidence		1	30	40
Digits eclipsed		10	18	42
		ho.	l	ll
Beginning	Septemb 7d day after noon.	4	59	14
Visible		6	24	52
Greatest obscuration		6	29	54
End.		8	0	34
Totall duration		3	1	20

The Type of all the Ecipses you may finde in the preceding Ephemeris.

The last eclipse of the Sun (though the 2d in order) according to the exact time of the apparent conjunction in the Meridian of *Sandwich*. is March 29 day, 6 min. 15. sec. after ten of the clock before noon.

The Sun and Moon in ♈ 19 deg. 15. min. 17.

		h	'	ll
Intervall of the true & visible ☌ subst,		0	1	56
The visible.	before noon, Mar. 29,	10	4	19
The intervall between the visible ☌ and greatest obscuration subst.		0	0	15
The greatest obscuration .Mar. day	29.	10	4	4 A.M.
The minutes of Incidence		0	0	33 7
The time of Incidence		0	1	10 8
The time of Emersion		0	1	9 45
The parts deficient			31	37
Digits darkned		0	11	34 44
Beginning.	March 29.		8	53 56
Visible.	before		10	4 19
Greatest obscur.	noon at		10	4 4
End.	Sandwich		11	13 49
Totall duration.			2	29 53

To know when the effects of this great Eclipse begin, and how long they last.

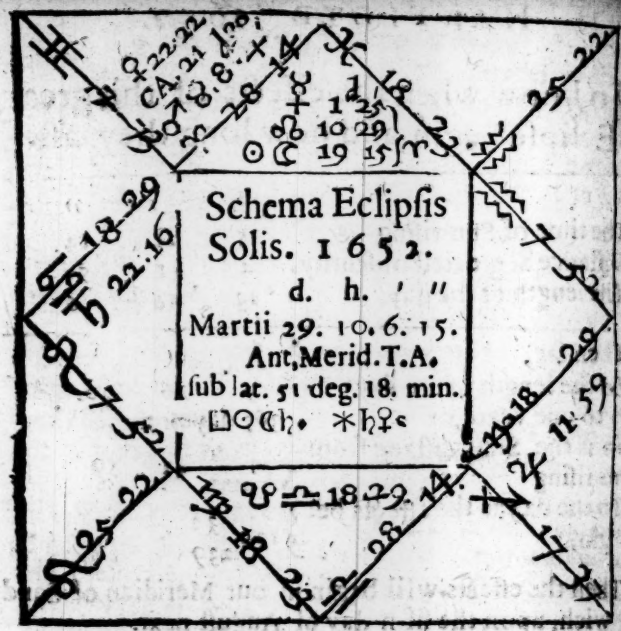
	h.	′	″
The time of Sun rising	5	22	14
Distance at greatest obscurity.	4	41	50
The length of the day.	13	16	36

	h	′	l
Then say,			
As the length of the day	13	16	36
Is to one yeare, or	365 dayes ;		
So is the Suns distanc from his rising	4	41	50
To the dayes the effects begin,	129	32	
		239	

Then the effects will begin in our Meridian of Sandwich, upon the fifth day of August next.

How long the effects continue.

The duration of the Eclipse 2 hours, 19 min. 53. sec.
Two houres, that is two years beginning at the fifth of August next.
Then for the odd minutes 19. seconds 53
Say alwayes,
As twelve minutes
Is to 73 degrees,
so is the minuts remaining 19 min. 53 sec
to 121 dayes, *ferè*.
Then the effects last 2 years, 121 dayes, or 4 moneths, beginning at the fifth of August next.



I have written, and might write much of this Eclipse, but my paper will not hold out, and therefore I forbear. The places subject are those under the fiery Triplicity, as ♈ ♌ ♐, and their opposite signes, and those that are under ♉ ♏ ♒, cannot be free. A list of those places you may read in *Lillies* Introduct. or Mr. *Booker* his Almanack for 1644. And generally all the Princes of Europe may sufficiently taste of misery during the effects of this Eclipse, and likewise the next as big, which will happen upon the second of August 1654. and in the fiery triplicity ♌, and in the tenth House of the Heavens also, the House of Kings, Princes, Potentates, and all Rulers; a warning to them, to whom I commend the 82 Psalm of the blessed David to their serious consideration.

The Eclipse is in a manner totall; and *Messahalah* saith,

lith, *Scito quod in Eclipsi Solis non potest fieri quin significetur aliquod accidens magnum secundum quantitatem ipsius Eclipsis.* And this Eclipse being so great, as also the Eclipse in 1654. cannot but presignifie some strange things, and dangerous events to befall some great ones, &c. For the Rule is, *Eclipses parvæ parum, magnæ magnopere nocent.* Small Eclipses are but little hurtfull, but great Eclipses shall be of great force, and operate very violently and dangerously, especially upon those who are significators any way in it, &c.

I shal now end with a few verses upon the Eclipse. But know first, ♄ the significator of Popes, Jesuits, Sectaries, or any seditious or factious persons either in Church or State, is Astrologically in the 12 House, the House of imprisonment, trouble, vexation, &c. yet in the House of his joy, and moving but very slowly, being newly returned from his retrogradation, and in a moveable signe, yet he is Lord of the 9 House, the House of religious persons, & religion, &c. Wisdom, Arts, &c. Here is a mystery in this, as in many things in this *Scheme erected.* But *plurima tacco*;

Soul sighs and sobs! such sobs sad times do crave,
For more of life the more of sin we have.

Plus vitæ, plus Peccati.

By this Eclipse the meer ignorant wil confesse, that the Moon hath not in her *Lucem*, but *Lumen*, and that *innatum.* Some School-boyes can distinguish between *Lux* and *Lumen.* Know then by the new Lights I mention in these following verses, I mean old Heresies newly revived, and long agoe condemned as Heretical. But good Reader, *Prius intellige, tunc increpa*, understand before you condemne me. *Henry Harflete.*

In

In Eclipsin Solis Martii 29.

Canterbury, Sandwich, Dover! Behold
Phœbus and *Phœbe* conjoyn'd, yet he's bold
To hide himself a while, asham'd to see
Your strange Divisions how great they be,
Presbyters, Independents, neuters some,
Thus th'old light hides himself when new lights come
These admired, that obscur'd, then 'tis no doubt,
But new lights may sometimes put th'old lights out.
Stay! *Phœbus* appears again, glitters round,
Then th'old light may in time put new lights down.

Ab ædibus nostris Ashenf. juxta Sandwichum Jun. 26. 1651.

FINIS.

Courteous Reader,

THere is now in the Presse, if not already published, a new Ephemerides of the Celestiall Motions for 7 years, beginning 1652. according to the Hypothesis of Harmonicon Cœleste, wherein is contained the daily motion of the Sun, Moon and Planets, their conjunctions, and aspects, with a description of the Eclipses, &c. A work exceeding usefull to all such as study the Mathematicks, Composed by Vincent Wing, Mathemat.

There is re-printed that excellent piece of *Sandys Travels*, containing a description of the Turkish Empire, of Ægypt, of the Holy-land, of Italy, and the Islands adjoyning; to be sold by *John Sweeting* at the Angell in Popes-head-Alley.